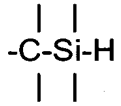
What is claimed is:

1. A method comprising depositing on a substrate a plurality of layers, wherein one or more of the layers is a low dielectric constant oxidized organosilane layer comprising carbon, wherein the carbon content of the low dielectric constant oxidized organosilane layer is from 1% to 50% by atomic weight, and a top layer of the plurality of layers is a photoresist.

2. The method of claim 1, wherein the low dielectric constant oxidized organosilane layer is deposited in the presence of RF power from a mixture comprising an organosilane compound including the structure:



3. The method of claim 2, wherein the organosilane compound is methylsilane.

4. The method of claim 2, wherein the mixture further comprises an oxidizing gas.

5. The method of claim 4, wherein the oxidizing gas is N_2O.

6. The method of claim 2, wherein the organosilane compound includes the structure $SiH_a(CH_3)_b(C_2H_5)_c(C_6H_5)_d$, where a = 1 to 3, b = 0 to 3, c = 0 to 3, d= 0 to 3, and a+b+c+d = 4, or the structure $Si_2H_e(CH_3)_f(C_2H_5)_g(C_6H_5)_h$, where e = 1 to 5, f = 0 to 5, g = 0 to 5, h = 0 to 5, and e+f+g+h = 6.

7. The method of claim 1, wherein the low dielectric constant oxidized organosilane layer is deposited in the presence of RF power from a mixture comprising an organosilane compound comprising an organo group selected from the group consisting of alkyl, aryl, alkenyl, and cyclohexenyl groups.

8. The method of claim 1, further comprising etching the low dielectric constant

oxidized organosilane layer using fluorine, carbon, and oxygen ions.

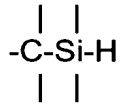
9. The method of claim 1, further comprising etching a pattern in the plurality of the layers.

10. The method of claim 1, wherein the dielectric constant of the low dielectric constant oxidized organosilane layer is about 3.0.

11. A method comprising depositing on a substrate a plurality of layers, wherein the plurality of layers comprises one low dielectric constant oxidized organosilane etch stop layer comprising carbon, wherein the carbon content of the low dielectric constant oxidized organosilane layer is from 1% to 50% by atomic weight, a layer selected from the group consisting of parylene, FSG, and silicon oxide layers, and a top layer of the plurality of layers that is a photoresist.

12. The method of claim 11, wherein the low dielectric constant oxidized organosilane etch stop layer is between two dielectric layers in the plurality of layers.

13. The method of claim 11, wherein the low dielectric constant oxidized organosilane etch stop layer is deposited in the presence of RF power from a mixture comprising an organosilane compound including the structure:



14. The method of claim 13, wherein the mixture further comprises an oxidizing gas.

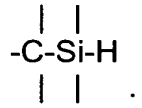
15. A method comprising depositing on a substrate a plurality of layers, wherein two of the layers are low dielectric constant oxidized organosilane layers comprising carbon, wherein the carbon content of the low dielectric constant oxidized organosilane layer is from 1% to 50% by atomic weight, and a top layer of the plurality of layers is a photoresist.

16. The method of claim 15, wherein the plurality of layers further comprises a layer selected from the group consisting of parylene, FSG, silicon oxide, and silicon nitride layers.

17. The method of claim 15, wherein the plurality of layers comprises an etch stop layer adjacent both of the two low dielectric constant oxidized organosilane layers.

18. The method of claim 17, wherein the etch stop layer is a silicon oxide or silicon nitride layer.

19. The method of claim 15, where in the low dielectric constant oxidized organosilane layers are deposited in the presence of RF power from a mixture comprising an organosilane compound including the structure:



20. The method of claim 19, wherein the mixture further comprises an oxidizing gas.